Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER – II • EXAMINATION – WINTER 2012

Subject code: X 20902 **Date: 24/01/2013**

Subject Name: Electrical Measurement I & II

Time: 10.30 am - 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define following terms (i) Sensitivity (ii) Precision (iii) Hysteresis (iv) Drift	**07**
	(b)	With neat sketch explain the two-wattmeter method of power measurement.	**07**
Q.2	**(a)**	Explain working principle of megger.	**07**
	(b)	Explain various effects with which deflecting torque is produced?	**07**
		OR	
	(b)	Explain difference between Gravity control and spring control.	**07**
Q.3	**(a)**	Which are the different methods of power measurement in 1-ph and 3-ph systems.	**07**
	(b)	State the different methods of measuring medium resistances. Explain any one method in brief.	**07**
		OR	
Q.3	**(a)**	Explain how the current range of a PMMC instrument can be extended? Also derive equation for shunt.	**07**
	(b)	Explain the construction and working principle of Dynamometer type instruments.	**07**
Q.4	**(a)**	Draw the circuit diagram of Schering bridge and derive expression for C and tanδ at balance for dielectric under test.	**07**
	(b)	With phase diagram explain the working principle of current transformer, State its applications.	**07**
		OR	
Q.4	**(a)**	What is the importance of Wien's bridge? Explain in brief.	**07**
Q.4	**(b)**	Draw the circuit diagram of Anderson's bridge. State the application of the bridge.	**07**
Q.5	**(a)**	Discuss with neat diagram the DC potentiometer-Crompton potentiometer with its calibration and test procedure.	**14**
		OR	
Q.5	**(a)**	Discuss the different methods of damping in indicating instruments.	**07**
	(b)	Construction and working of D'Arsonval galvanometer.	**07**

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